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ABSTRACT

A study assessed the applicability of the American Institutes for Research (AIR) procedures' Performance-Against-Standard form for use in personnel evaluation by the Ohio Cooperative Extension Service. The study also compared relevant test construction approaches identified in the literature to those used in the AIR study in attempting to confirm and improve the reliability and validity of the performance appraisal form. During the study, supervisors of Ohio's 10 extension areas each appraised the performance of those agents working under them who had been employed for at least 6 months but for less than 3 years. Job analysis and the technique of item selection were used to judge item availability on the form. To measure the reliability of the form, researchers utilized Cronbach's alpha. In addition, multivariate measurement was used to determine the accuracy and relevance of the form. Because evidence indicated that the revised Performance-Against-Standard form does provide an accurate and relevant measure of employee performance, recommendations were made calling for including the form into the appraisal system of the Ohio Cooperative Extension Service. (The six page personnel appraisal form is appended.) (MN)

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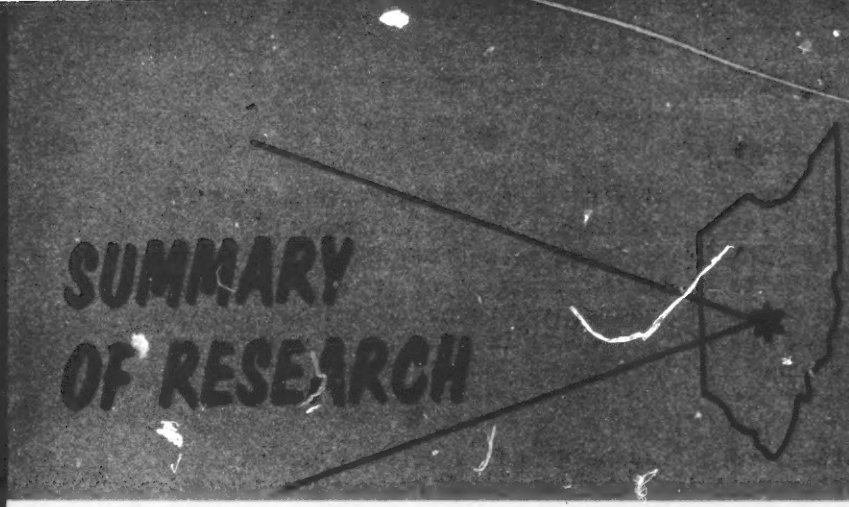

DEPARTMENT OF
AGRICULTURAL EDUCATION

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DEVELOPMENT OF PERSONNEL APPRAISAL PROCEDURES TO MEASURE THE JOB PERFORMANCE OF COUNTY EXTENSION AGENTS

ED230712

Howard Ladewig and Kun Sun Shiao

U.S. DEPARTMENT OF EDUCATION
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INTRODUCTION

The accurate appraisal of a county extension agent (CEA) is a major concern of the Cooperative Extension Service. Normally, performance appraisal is undertaken for two purposes--judgmental and developmental (Cummings and Schwab, 1973).

Judgmental or evaluative appraisal provides results for administrative decisions concerning such aspects as rewards based on merit, promotions, transfer and termination. Developmental appraisal provides results to help improve performance by identifying areas for improvement and growth. Thus, an effective personnel appraisal system focuses on both past performance and on improvements in future performance.

Historically, the Cooperative Extension Service has utilized a variety of techniques to appraise the job performance of the county

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extension agent. These methods generally have been subjective in nature and have ranged from personal interviews to subjective ratings. In addition, measurement of individual abilities to perform on the job often have been based on various traits or characteristics of employees which have little relationship to successful task performance (Cummings and Schwab, 1973). Consequently, the effectiveness of such methods has been restrained by a lack of evidence on the accuracy of the judgments of the appraisers.

In recent years, testing procedures have been developed and utilized to bring more accurate measurement into the extension performance appraisal process. A major advantage of testing is that it provides one with a standardized and objective judgment of what an existing employee has accomplished. In addition, the scientific evidence of reliability and validity procedures derived from using standardized measures provide more useful information than do traditional subjective methods in confirming the actual effectiveness of the performance appraisal procedures used by the organization.

One testing procedure used to measure employee performance that is gaining support is to base performance measures on job analysis and general knowledge, skill, and competency related to human behavior (Hyatt, 1966; McCormick, 1979). The American Institutes for Research (AIR) has contributed substantially toward this effort by utilizing the component of work behavior in the design and construction of standardized tests to be used in performance appraisal at different levels and positions of the Cooperative Extension Service.

In 1977, the Science and Education Administration (SEA-Extension) of the U. S. Department of Agriculture employed the American Institutes for Research (AIR) to develop standardized tests that could be used by state Cooperative Extension Services in the selection of new employees as county extension agents and for performance appraisal of existing personnel employed as county extension agents. To accomplish this goal, AIR conducted a nationwide study entitled "Development of Performance Evaluation and Selection Procedures for the Cooperative Extension Service" (Hahn, 1979). As a result of the AIR study, a personnel appraisal form entitled "Performance-Against-Standards Form" was developed and provided to the Cooperative Extension Service.

Because different job duties and specifications exist among various state Cooperative Extension Services, AIR recommended that each state make its own decision about using the performance appraisal form in accordance with the state's objectives and focus of management philosophy. While it is necessary for each state to consider the applicability of the form, it is necessary also to consider the accuracy and relevance of the form.

It is the purpose of this study to determine whether the personnel appraisal form designed by AIR has acceptable levels of reliability and validity for use by the Ohio Cooperative Extension Service. Because the reliability and validity levels of any performance appraisal form will vary in response to the procedures used to construct the form, this study

also will compare the procedures used by AIR in constructing the performance appraisal form to existing research and theoretical considerations.

The validation procedures to be used in this study are as follows. First, job analysis, item selection based on item-total score correlation, and a scoring system measured by a linear summative scale will be applied to confirm the effective test construction of the personnel appraisal form developed for Cooperative Extension Service by American Institutes for Research (AIR). Second, the reliability of the form will be estimated by the method of internal consistency. The alpha coefficient will be the major criterion used to indicate the degree of interrelatedness among items on the form. Finally, the construct validity of the performance appraisal form will be determined through correlation and factor analysis.

AMERICAN INSTITUTES FOR RESEARCH PROCEDURES

Job Analysis

Job analysis attempts to describe a job in terms of the demands made upon the job incumbent (Cummings and Schwab, 1973). A rigorous procedure of collecting information and materials in support of a job analysis was carried out by AIR. The job analysis consisted of five methods: interviews, critical incidents, position analysis questionnaire, job analysis questionnaire, and checklist of behavioral and other work outcomes. The classification of job tasks, job duties, and performance dimensions were determined by subjective judgments of supervisors and agents who participated in the study. Also, the critical incident technique for collecting job outcomes was used as a base for a discussion of knowledge, skills, attitudes, and other characteristics (KSAO requirement) necessary to the successful job performance by extension agents. The job analysis provided two important outputs of KSAO contents and constructs to be tested and performance domains to be measured on the job. The two output contents are considered to be basic requirements for the county agent position and provide fundamental item clusters used in formulation of the Performance-Against-Standard Form. A brief review of the AIR test construction procedures is provided in the following sections.

Item Selection

The elements of job outcomes used by AIR to construct the Performance-Against-Standard Form were collected in the stage of job analysis. Fourteen dimensions of performance outcomes originally were classified by subjective judgment of supervisors and agents. These dimensions are presented in Table 1.

There were 1,003 items or descriptors structured around fourteen dimensions and included in preliminary checklists describing behaviors and results. AIR respondents were requested to scale each descriptor on a seven-point scale. The average rating assigned the descriptor identified the degree to which the descriptor or standard described effective

Table 1. Dimensions of Performance Outcomes as Classified by Supervisors and Agents

1.	Assessing community needs
2.	Planning
3.	Program promotion and public relations
4.	Involving the community in program implementation
5.	Conducting education programs
6.	Advising clienteles
7.	Evaluating programs
8.	Reporting
9.	Continuing professional development
10.	Office management and administrative tasks
11.	Supervising
12.	Working relations with staff
13.	General interpersonal behavior and characteristics
14.	Personal behaviors and characteristics as identified in AIR study

performance on a dimension. The standard deviation of the rating for each performance standard (descriptor) represented the amount of agreement among the raters. Each preliminary item was tested against the following criteria.

1. An outcome had to have been observed by 80 percent or more of the supervisors.

2. An outcome had to be applied to each job class in the opinion of 80 percent or more of the respondents.

3. The standard deviation of the scale value for an item could not exceed 1.50.

4. The item distribution of scale values could be multimodal.

5. There could be no statistically significant difference between the supervisors and agents in their scale value for the item.

There were 779 items that met these criteria and were retained as an item bank of performance outcomes. Of this number, 200 items were selected to measure the six categories of the Performance-Against-Standard Form and summarized in Table 2 (Hahn, 1979:25).

Table 2. Functional Categories and Number of Items in the Performance-Against-Standard Form

Functional categories	Result-oriented standard	Behavior-oriented standard
Program planning	10	15
Program promotion and public relations	10	10
Program implementation	45	35
Program support	10	25
Interpersonal and personal		20
Supervisory performance		20

It should be noted that each functional category listed in Table 2 may cover several performance dimensions and relate to several job duties. A comparison of Tables 1 and 2 illustrates the overlapping of function and dimensions. The function of program planning includes dimensions 1 and 2; the function of program promotion and public relations covers dimension 3; the function of program implementation consisting of dimensions 4, 5, and 6; the function of program support covers dimensions 7, 8, 9, and 10; the function of interpersonal and personal included dimensions 12, 13, and 14; and the function of supervisory performance is associated with dimension 11. In sum, the original Performance-Against-Standard Form is more correctly defined as including 10 components which were generated from 6 functional areas. As presented in Table 2, 4 components are result-oriented standards and 6 components are behavior-oriented standards.

Scoring

For each of the 200 items in the Performance-Against-Standard Form, 5 categories (agree, disagree, neither, don't know, and not applicable) were provided to enable the rater to appraise the employee. In addition, a predetermined weight was assigned to each item based on the judgment of a panel of 80-100 agents and supervisors (See Appendix A). A description of the AIR scoring procedure is provided.

> For all standards having a positive weight, record the value of the standard which appears to the right of the statement in the scoring space provided, if there is a checkmark in the agree column, or an H* or B* in the disagree column. If there is an L* or W* in the disagree column, record a zero in the scoring space for the standard.
>
> For all standards having a negative weight, record the value of the standard, disregarding the minus sign, in the scoring space provided if there is an H or a B in the disagree column. If there is an L or W in the disagree column, record a zero in the score space. Also, if there is a checkmark in the agree column, record a zero in the scoring space.
>
> The scoring space is to be left blank for any standards that have responded in the neither, don't know, or not applicable columns. Compute the Performance-Against-Standard scores for each section by adding the scores, divided by the sum of the values of items scored in the section, disregarding sign, carrying out the quotient to two decimal places, and multiplying by 100. The division and multiplication by 100 is necessary where the standards are used outside this example because some agents may be rated on fewer items than others.
>
> *H = Higher; B = Better; L = Lower; W = Worse

Reliability

A reliable determination of each item in the AIR study was based on the criterion of not exceeding a standard deviation value of 1.50. This reliability reflects the relative amount of agreement among judges as to the scale location of a particular item.

A second measure of reliability was Cronbach's alpha. However, the study reported the reliability of the only one dimension (conducting educational programs). Its value was .99. No further evidence was provided to estimate reliability.

Validity

AIR reported that the Performance-Against-Standard Form contained a high intercorrelation for the fourteen dimensions and the overall rating of job effectiveness. However, evidence of construct validity was not provided by AIR.

TEST CONSTRUCTION PROCEDURES

The major purpose of this study is to estimate the applicability of the Performance-Against-Standard Form for use in personnel appraisal by the Ohio Cooperative Extension Service. This study also compares relevant test construction approaches identified in the literature to those used in AIR's study in attempting to confirm and/or improve the reliability and validity of the performance appraisal form. The selection of other test construction approaches is based on existing research and theoretical considerations (Shiao, 1981).

Item Selection

In the AIR study, the selection of items to be included in the Performance-Against-Standard Form was based on two major criteria. The first criterion used to discard items was that an item had to be confirmed by 80 percent or more of supervisors as being applicable to performance appraisal. Second, the standard deviation of the scale value for an item could not exceed 1.50.

The criterion of applicability of 80 percent is consistent with the literature on development of a performance appraisal form and also is adopted for use in the present study. Some researchers, however, are opposed to using the standard deviation to retain items (Smith and Kendall, 1963; Campbell et al., 1973; Fogli, Hulin, and Blood, 1971) because the standard deviation emphasizes the agreement within a group of judges but does not consider the relationship of each item with its structural dimension for confirming the expanding item validity. To increase the homogeneous structure of the Performance-Against-Standard Form and to re-evaluate the item validity of each item, the criterion of item-total score correlation will be used in this study to confirm the selection of items included in the Performance-Against-Standard Form.

Scoring

A predetermined score was established for each item and each dimension in the Performance-Against-Standard Form by AIR. Empirically, the use of a pre-weighted score could influence the unstandardized judgment of the criterion group. The ambiguous definition of successful or unsuccessful performance could increase judgmental bias in selecting items. In addition, the different weights assigned to behavior patterns could be judged from a variety of perspectives (Schwab et al., 1975; Cummings and Schwab, 1973).

A second limitation of the pre-weighted scoring system is that agents may obtain zero value for an item if their performance is considered below the state level of that performance standard. It may be argued that one cannot perform at zero value in a behavior-oriented job outcome. An alternative scoring measure will be used in this study and is similar to

the scoring measure of a summated scale. Use of a summated score based on an equal-interval scale should diminish the bias of a reference group because each item will be assigned equally weighted value alternatives.

A third limitation of the scoring system used by AIR is that the weighted value assigned to each dimension in the AIR study was derived from the classification of subjective judgments and based on the relationship of categories of job duties. This procedure of weighting dimensions does not consider the intercorrelation among the components. In fact, no evidence was provided for the weighted value assigned to each component in the performance appraisal form. The confirmation of weighted values for each of the ten components will be conducted via factor analysis. Strictly speaking, the emphasis on assigning a weighted value to each component is considered to be more rational and have more practical meaning than to assign weights to each performance item.

In sum, the alternative scoring system used in this study is based on the following considerations:

1. The irrational problem of providing a zero score to measure performance outcomes would be diminished.

2. The measurement of behaviorally oriented items would be considered to provide the continuum of a scale value.

3. The alternative system would permit the addition of new items to the Performance-Against-Standard Form based on the need of varied job situations.

The summated scores of each component and the overall performance score will be used to represent the obtained scores of each agent's performance. Since each agent's score may be based on responses to different items in terms of applicability, an average summated score will be prepared. That is, the total score will be divided by the number of items scored.

Reliability

AIR provided evidence to support the reliability of only one of the 14 dimensions of the Performance-Against-Standard Form. The reliability of item structure of each dimension of the form will be examined in this study.

Validity

Only limited evidence of validity was reported in the AIR study. The classification of each job dimension was subjectively evaluated by professionals and no empirical construct validity explanation was provided by the AIR research. Ensuring the validity of the construct structure of job performance outcomes and components in the Performance-Against-Standard Form will be undertaken in this study.

METHODOLOGY

The data for this study were obtained from the supervisors of the ten extension areas of Ohio. Each extension supervisor appraised agent performance in the early spring of 1980. The analysis of data was conducted at the Institute and Research Computer Center at The Ohio State University. SPSS and SAS computer packages were used in completing the statistical analysis.

Sample

The sample of this study consists of county extension agents in the State of Ohio who met the following criteria:[1]

1. The agent must have worked at least six months but not more than three years. The employed time would be from spring 1977 to autumn 1979.

2. The agent must still be working on the job during the period of the study.

Measurement and Scoring

As reported in Table 2, the AIR Performance-Against-Standard Form consisted of 200 items classified into ten component sections. Since the agents included in this study had no supervisory responsibility, the supervisory component (20 items) was omitted from the analysis. Thus, the performance appraisal form to be tested contained 180 items.

The scoring of each item on the form was conducted using two procedures. First, each item was scored according to the procedure used in the AIR study. Second, each item was scored using the equal-interval scoring system. The AIR scoring procedures were described previously. In sum, each agent received a score for some or all items within each component. In addition, a score for each component and a total performance score was calculated for each agent.

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[1]These two criteria were developed for a larger study concerned with employee selection and performance appraisal. The objective of the larger study was to compare scores on an employee selection test (designed by AIR) to scores on the performance appraisal form at one point in time. However, an examination of selection test results indicated that the selection test did not provide reliable scores. Therefore, a comparison of selection test results to performance appraisal scores was eliminated from the overall study.

A description of the equal-interval scoring procedure is as follows:

The value of 3 is assigned to a checkmark with H (higher) or B (better) in the disagree column; the value of 2 for agree column; and the value of 1 for disagree with L (lower) or W (worse).

RESULTS

Item Selection

In utilizing a standard form for performance appraisal, it is necessary to eliminate items that do not apply to a particular individual's job performance. For purposes of this study, those items in the Performance-Against-Standard Form that were "not applicable" to 20 percent or more of the respondents were eliminated from further consideration.

Following this criterion, the item numbers listed in Table 3 were eliminated from further consideration in determining the relevance and accuracy of the Performance-Against-Standards Form. Seven items were discarded--one from section IB, five from section IC, and one from section IIC.

Table 3. Items discarded with 20 percent or more "not applicable" responses

Reference No of Item[a]	% of Unapplicable Responses
IB 22	31
IC 57	29
IC 73	24
IC 54	26
IC 65	24
IC 106	21
IIC 112	26

n = 62

[a]The description of each item is contained in Appendix A.

Table 4. Items discarded with the criterion of coefficient of item-component correlation

Categories of Components	Reference No. of Items	Correlation Coefficient of Item-Component*	$\bar{X}$	S
Component IC	IC 38	0.14	2.02	0.02
	IC 95	0.26	1.80	0.26
	IC 114	0.31	1.97	0.10
	IC 93	0.21	2.83	0.32
	IC 96	-0.10	2.90	0.20
	IC 97	0.30	1.83	0.28
	IC 124	0.16	2.92	0.16
Component ID	ID 136	0.22	1.94	0.06
Component IIA	IIA 21	0.24	2.04	0.11
Component IIB	IIB 35	0.29	2.00	0.07
	IIB 36	0.24	2.00	0.04
Component IIC	IIC 48	0.23	2.96	0.07
	IIC 49	0.24	2.04	0.11
	IIC 101	-0.03	2.92	0.17
	IIC 103	0.16	2.90	0.19

*Not significant at .05 level

A second and more important criterion used to select items in a performance appraisal test is the relationship of individual item scores to the total score of a component or dimension. The criterion measures the homogeneous support of items to the overall item structure by comparing the scaling characteristics of the individual item to the total component measure. A valid item should have a significant and positive correlation to the total score of the overall item structure. A positive correlation with a statistical significance at the 0.05 level was used as a standard for judgment of homogeneity of items. Table 4 lists those items which did not reach the acceptable standard.

In sum, a revised item structure of each component--after taking out ineffective items--has been constructed. The number of items in the revised Performance-Against-Standard Form are compared to the original number of items in each dimension in Table 5. The elimination of ineffective items reduces the form from 180 to 142 items.

Table 5. Comparison of item number between revised and original item structure of Performance-Against-Standard Form

	Component Categories	Number of Items on Revised Form	Number of Items on Original Form
(IA)	Program planning results	10	10
(IB)	Program promotion and public relation results	9	10
(IC)	Program implementation results	33	45
(ID)	Program support results	9	10
(IIA)	Program planning behaviors	14	15
(IIB)	Program promotion and public relation behaviors	8	10
(IIC)	Program implementation behaviors	27	35
(IID)	Program support behaviors	17	25
(IIE)	Interpersonal and personal behaviors generally related to job	15	20
	Total	142	180

Reliability

To remove ineffective items is the first step to increasing the relevancy and accuracy of the Performance-Against-Standard Form. A second step is confirmation of the degree of reliability of the form. The calculation of Cronbach's alpha as a criterion of reliability provides support for the degree of accuracy of the performance appraisal form. Cronbach's alpha measures the average coefficient of inter-item correlation and represents the degree of internal consistency of the performance appraisal form.

Table 6 compares the reliability of the Performance-Against-Standard Form before and after discarding ineffective items within each component based on the use of the empirical-interval scoring procedure. The table reveals that the reliability of the performance appraisal form is not substantially changed with the removal of ineffective items. Thus, one may assume that the procedures used for item retention are viable.

Table 6. Comparison of Cronbach-alpha reliability of the Performance-Against-Standard Form before and after discarding ineffective items (using empirical-interval scoring procedure)

	Components	Reliability Before Discarding Items	Number of Items	Reliability After Discarding Items	Number of Items
(IA)	Program planning results	0.78	10	0.78	10
(IB)	Program promotion and public relation results	0.58	10	0.55	9
(IC)	Program implementation results	0.93	45	0.92	34
(ID)	Program support results	0.71	10	0.74	9
(IIA)	Program planning behaviors	0.90	15	0.90	14
(IIB)	Program promotion and public relation behaviors	0.69	10	0.69	8
(IIC)	Program implementation behaviors	0.93	35	0.92	28
(IID)	Program support behaviors	0.86	25	0.86	17
(IIE)	Interpersonal and personal behaviors generally related to job	0.88	20	0.87	15

The reliability of each component in Table 6 also shows that the internal consistency of components is different. Components IC and IIC are concerned primarily with program implementation results and behavior and have higher reliability coefficients than do the other components. The reliability of component IIA is higher than the component of program planning results (IA) and has the second highest level of reliable evidence. As a general rule, a reliability coefficient of .80 or better is desired. However, components IA, IB, ID, and IIB have lower reliability coefficients.

Scoring System

The degree of reliability of the Performance-Against-Standard Form also is affected by the scoring system used. The property of a scoring system is composed of arrangements of scale points, weighting score for each item or each dimension, and calculation of a total score. Since each of these properties can have an affect on reliability of the performance appraisal form, it is difficult to determine in advance which scoring system should be used. It was reported that the AIR study assigned a pre-weighted score to each item in the performance appraisal form. This study compares the reliability of that scoring system to one that utilizes an equally-weighted-value scoring system.

The data shown in Table 7 gives the comparison level of reliability obtained when using empirical-interval score and the pre-weighted score. The alpha coefficient in the empirical-interval score is higher than in the pre-weighted score. Since both scoring systems have the same item structure and number of items, the use of the empirical-interval scoring system appears to be more internally consistent than does the pre-weighted scoring system.

One explanation of lower reliability for the pre-weighted score used by AIR is that the pre-weighted score does not discriminate between average and superior performance. That is, agents who meet the minimum standards are given the same score as those agents who exceed minimum performance. Thus, while the pre-weighted scoring system may be the dominant design to determine a weighted value for each item in representing successful or unsuccessful job performance, its use is limited to a unique job pattern and job time and is difficult to use under different job situations and changing programs.

In conclusion, the evidence reveals that the empirical-interval score provides a higher reliability coefficient than does the pre-weighted scoring system. Because the empirical-interval score provides the advantage of allowing additional items to increase the reliability of the performance appraisal form without changing the scoring system, use of empirical-interval scores to measure job performances is recommended.

Table 7. The level of reliability of empirical-interval scoring system and pre-weighted scoring system

Component Categories		Empirical-Interval Score: Three-Scale Point (3,2,1)	Empirical-Interval Score: Pre-Weighted Score	Number of Items
(IA)	Program planning results	0.78	0.65	10
(IB)	Program promotion and public relation results	0.55	0.54	9
(IC)	Program implementation results	0.92	0.89	34
(ID)	Program support results	0.74	0.61	9
(IIA)	Program planning behaviors	0.90	0.76	14
(IIB)	Program promotion and public relation behavior	0.69	0.49	8
(IIC)	Program implementation behaviors	0.92	0.84	28
(IID)	Program support behaviors	0.86	0.70	17
(IIE)	Interpersonal and personal behaviors generally related to job	0.87	0.83	15

Table 8. Pearson correlation among items by performance appraisal components IA, IB, IIA

	IA. Program Planning Results										IB. Program Promotion and Public Relation Results									IIA. Program Planning Behaviors											
	12	1	2	19	7	18	16	4	17	11	35	38	27	28	26	29	20	34	32	24	19	18	9	6	4	3	10	25	8	5	1	11	17
12	1	.32	*	.39	.41	.51	.45	.42	.23	.22	.51	.48	*	*	*	*	.57	.49	.48	.57	.57	.35	*	*	*	*	*	.58	*	*	.29	*	.51
1		1	*	*	*	*	*	.40	*	*	.47	.33	*	*	*	*	*	*	.34	.47	.46	.68	.35	*	.34	.36	*	.35	*	*	.44	*	.41
2			1	*	*	*	*	*	*	*	*	*	*	*	.40	.41	*	*	*	*	.33	*	*	.32	.34	*	*	.64	*	.32	.42	*	*
19				1	.47	*	*	*	*	.29	*	*	*	*	*	*	.40	*	*	*	.47	*	*	.31	*	*	*	.48	*	*	.38	.41	.34
IA 7					1	*	.43	.32	*	.43	*	*	*	*	*	*	.38	.30	*	*	.58	*	*	*	*	*	*	.49	*	*	.30	.51	.39
18						1	.47	.37	*	*	*	*	*		*	*	.38	.30	.51	.15	.37	*	*	*	*	*	*	.36	*	*	*	*	*
16							1	.39	*	*	*	*	.51	*	*	*	.38	*	.48	.34	.34	*	*	*	*	*	*	*	*	*	*	*	.43
4								1	.41	*	.32	.28	.49	*	*	*	.62	.41	.43	.46	.64	.39	.49	*	*	*	*	.45	*	*	*	*	.44
17									1	*	*	.42	.38	.35	*	*	.36	.33	.31	.46	*	*	.40	*	*	*	*	.33	*	*	.30	*	.28
11										1	*	*	*	*	*	*	*	.35	*	*	*	*	*	*	*	*	*	*	*	.27	.28	*
35											1	.31	*	*	*	*	.45	.49	*	.42	.46	.30	.27	*	*	.58	*	*	*	.46	.43	*	.40
38												1	*	.27	*	*	.51	*	.45	.41	.30	*	.40	*	*	*	*	.32	*	*	*	*	*
27													1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
28														1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
IB 26															1	.85	*	*	*	*	*	*	.39	*	*	*	*	*	*	*	.32	*	*
29																1	*	*	.31	*	.29	*	*	*	*	*	*	.36	*	.35	.37	.44	*
20																	1	.42	.64	.45	.65	*	*	*	*	*	*	.49	*	*	*	.32	.58
34																		1	.41	.35	.57	*	*	*	*	*	*	*	*	*	*	*	.34
32																			1	.56	.64	*	.35	.30	*	*	*	.50	*	*	*	*	.47
24																				1	.55	.41	.41	.29	.30	*	*	.53	.41	*	.32	*	.42
19																					1	.32	*	.44	*	*	*	.54	.40	*	.35	.38	.65
18																						1	*	*	*	*	*	*	.38	*	.36	*	.33
9																							1	*	*	.45	*	*	.37	*	*	*	*
6																								1	*	*	*	*	*	.41	.30	.31	.41
4																									1	*	*	*	*	*	.34	*	*
IIA 3																										1	.31	*	*	.40	.32	*	.29
10																											1	*	*	.48	*	.39	*
25																												1	*	.38	.53	.33	.53
8																													1	*	.35	*	.45
5																														1	.58	.37	*
1																															1	*	.33
11																																1	.22
17																																	1

N = 62

*No significance at the .05 level

Validity

The construct validity of a performance appraisal form ensures the appropriate construct relationship among dimensions (components) and enables one to better interpret the overall construct structure.

Theoretically, the number of items designed to measure a construct should correlate highly to the item structure of each component (construct) and have low correlation or no correlation with items which measure another construct and considered to be independent of the first construct. Consequently, the definition of a construct as a unique variable is confirmed by the degree of relationship of one construct to other constructs.

In the AIR study, the Performance-Against-Standard Form was composed of nine components generated from 14 performance categories. If the dimensional patterns of the components in the Performance-Against-Standard Form are independent of each other, the correlation between components will not be significant and the Performance-Against-Standard Form can be treated as a multi-dimensional or multi-criterion form. Generally, a multi-dimensional measurement instrument is desired.

Items used to measure a construct should be related to other items in the same construct but should not be related to items in other constructs. Since the performance appraisal form contains nine components (supervision component was not applicable to this sample) and 142 items, it would prove tedious reading to present intercorrelation among all pairs of constructs and items. Therefore, the discussion of findings will be restricted to the item correlations within and between constructs of three components (IA, IB, and IIA) and presented in Table 8.

In Table 8, the items of component IA (program planning results) should be highly correlated to each other and should have low correlations with the items of component IIA (program planning behaviors). In addition, components IA and IIA should not be highly related to component IB if the relationships among the three components are independent. The examination of Table 8 reveals that correlation of items within a component are similar to correlation of items between components.

Since the paired comparison of items between all nine components is quite lengthy, an average score for each component was computed. Correlations between components were than calculated and are presented in Table 9. All components are significantly related to each other and to the average score of overall performance. In addition, the size of the correlation coefficients indicates that the scoring tendency of each dimension tends to unfold with the total score of the performance appraisal form. The evidence further confirms that the Performance-Against-Standard Form has a composite structure and not a multi-dimensional structure.

Due to the composite nature of the Performance-Against-Standards Form, common factor analysis was used to determine whether performance appraisal components presented in the correlation matrix of Table 9 can be accounted for by one common factor. Common factor analysis assumes that the variance of an item variable (or component) is common to other components. Unrotated

Table 9: Pearson product moment correlation matrix by component and overall score for Performance-Against-Standard Form.*

Component Categories	IA	IB	IC	ID	IIA	IIB	IIC	IID	IIE	X+
IA	1.00									
IB	.65	1.00								
IC	.78	.66	1.00							
ID	.65	.47	.69	1.00						
IIA	.49	.39	.61	.53	1.00					
IIB	.59	.54	.47	.39	.43	1.00				
IIC	.69	.59	.69	.60	.64	.59	1.00			
IID	.51	.46	.60	.58	.60	.34	.58	1.00		
IIE	.69	.66	.69	.51	.56	.51	.56	.44	1.00	
X+	.85	.74	.90	.67	.73	.66	.86	.74	.78	1.00

n = 62
*All correlations are significant at .01 level
X+ is average score of overall Performance-Against-Standard Form.

orthogonal (principal axis method) and promax oblique rotated methods of factor analysis were employed (the sum of all item loadings on the factor). Kaiser (1974) suggests that eigenvalues greater than or equal to one should be retained. Following this rule of thumb, the factor matrices presented in Table 10 indicate that all nine components are patterned as a unique factor.

The square of a loading multiplied by 100 gives the percent variation that a component has in common with a common factor. The squared factor loading in a row indicates the variance of a component accounted for by the factor. Communality or h^2 represents this variance. The eigenvalue which is the sum of the squared factor loadings in a column indicates the amount of variation accounted for by the factor. As depicted in Table 10, all components of the Performance-Against-Standards Form are categorized as one factor and this factor explains 60 percent of the total variance contained in the correlation matrix of Table 10. Thus, the Performance-Against-Standard Form is considered to be a composite form containing nine highly related components and is considered as a composite criterion form and not a multi-criteria form.

The pattern loadings in the promax rotated pattern matrix of Table 10 can be explained as the measurement of the unique contribution or the dependence of each component on the factor. In other words, a pattern loading is viewed as a regression coefficient of the component on the factor. This coefficient may be treated as a weighted value assigned to

Table 10. Unrotated orthogonal factor matrix and promax rotated pattern matrix on nine components of Performance-Against-Standard Form

Component Categories	Unrotated Orthogonal Factor Matrix		Promax Rotated Pattern Matrix	Communality (h^2)
	Factor Loadings		Factor Loading	
	I	II	I	
IA	.85	.11	.85	.73
IB	.73	.25	.73	.53
IC	.88	-.06	.88	.77
ID	.73	-.20	.73	.55
IIA	.78	-.16	.78	.61
IIB	.63	.21	.63	.40
IIC	.82	-.12	.82	.67
IID	.68	-.28	.68	.46
IIE	.77	.26	.77	.60
Eigenvalue:	5.29	.35		
Total variance:	58.77	3.89		
n = 62				

each component. Data indicate that the factor loading of most components in Table 10 to be nearly equal. Providing weighted values to each component would have similar validity as providing an equal-level value to all components.

Based on the evidence at hand, there is little reason to distinguish construct structures among the nine components. Even though one's job duty is correlated with each performance component as reported in AIR's study, this study confirms the Performance-Against-Standard Form to be a unidimensional scale which can be represented by one overall construct. Thus, an average summated score of all items may be used to determine the rank of individual job performances.

Table 11. Listing of 60 Standards Included in the Performance-Against-Standards Form by Component and Item Number.*

Section		Number of Standard
Part 2. Results-Oriented Standards		
A. Program Planning Results	(IA)	12, 1, 7, 4
B. Program Promotion and Public Relation Results	(IB)	35, 20, 32
C. Program Implementation Results	(IC)	51, 53, 47, 66, 69, 71, 125, 42, 105, 100, 111, 67, 89, 119, 118, 104, 122, 83
D. Program Support Results	(ID)	132, 129, 144, 145, 139,
Part 3. Behavioral Standards		
A. Program Planning Behavioral	(IIA)	24, 19, 6, 25, 1, 17
B. Program Promotions and Public Relations Behavior	(IIB)	27, 34, 38
C. Program Implementation Behaviors	(IIC)	68, 95, 81, 87, 70, 98, 100, 115, 54
D. Program Support Behaviors	(IID)	117, 116, 123, 131, 126
E. Interpersonal and Personal Behaviors Generally Related to Job	(IIE)	176, 168, 194, 192, 200, 196, 172

*See Appendix A for description of each standard.

FURTHER REDUCTION OF ITEMS

The Performance-Against-Standards Form was found to be a composite measure of employee performance rather than a multi-dimensional measure. Because the nine components of the performance appraisal form are significantly related to each other, agents' scores should not be compared for individual components. Since the form provides only one measure of total performance, the number of items used to measure performance should be reduced.

Using the item-total score correlation procedure for item selection (and described previously), each of the 142 items was correlated against the average total score. Based on the criterion of retaining items having Pearson product moment correlation coefficients of .50 or greater, it was determined that the item structure of the Performance-Against-Standards Form could be adequately represented by 60 items. In addition, Cronbach's alpha was calculated to determine the internal consistency of the 60-item scale. The resulting reliability coefficient of .96 indicates the reduced scale to be quite reliable. A listing of the item numbers by components for the 60 items is presented in Table 11. The distribution of items within each component is similar to that of the 142 item scale. The statements corresponding to the item numbers may be found in Appendix A.

SUMMARY AND CONCLUSIONS

This study has attempted to measure the degree of reliability and validity of the Performance-Against-Standards Form as used in the personnel management system of the Ohio Cooperative Extension Service. Job analysis and the technique of item selection (in terms of item-total score correlation and/or item-criterion correlation) were used to judge item availability on the form and several items were eliminated from the form. Cronbach's alpha was utilized to measure the reliability of the form. In addition, multivariate measurement was used to determine the accuracy and relevance of the form.

The evidence indicates that the revised Performance-Against-Standards Form does provide an accurate and relevant measure of employee performance. Thus, its inclusion in the performance appraisal system of the Ohio Cooperative Extension Service is recommended. Because the Performance-Against-Standards Form represents a composite scale rather than a multi-dimensional scale, the number of items in the scale can be reduced from 142 to 60.

In conclusion, the Performance-Against-Standards Form has relevance for the Ohio Cooperative Extension Service in measuring the job performance of county extension agents. Additional research in different settings is required to confirm the overall applicability of the performance appraisal form for each State Cooperative Extension Service. In addition, a long-range study should be designed that follows individuals from the time of application through several years of employment.

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APPENDIX A

A. PROGRAM PLANNING RESULTS (Job Analysis Duties 1, 2, and 3)

This section includes standards for summarizing the agent's results in assessing community needs, involving the community in the planning process, preparing long-range and annual plans, planning specific program activities and events, and managing his/her own time.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IA 12	Has good community representation at planning sessions to set county priorities.	3.5						
IA 1	Identified new project areas that interested many clients.	2.5						
IA 2	Some, but not all, of the needs of clientele are reflected in his/her situation statements.	1.5						
IA 19	Occasionally does a barely adequate job because of last minute rush.	0.5						
IA 7	Poorly organized events dissatisfy clients.	−1.5						
IA 18	The number of minorities involved at all levels of his/her program where minorities are a part of the audience far exceeds minimum requirements.	3.5						
IA 16	Has no difficulty recruiting advisory committee members.	2.5						
IA 4	Has an active committee for assessing the county situation, but the committee needs to be more representative of all segments of society in the area.	1.5						
IA 17	His/Her planning committee functions but activities need improvement (e.g., provision for replacement or rotation of members, or more regular use of committee, or committee needs to understand objectives, responsibilities and procedures better).	1.5						
IA 11	Alienation exists between planning committee and agent.	−1.5						

B. PROGRAM PROMOTION AND PUBLIC RELATIONS RESULTS (Job Analysis Duty 10)

This section includes standards for summarizing the agents' results in promoting programs and the Extension Service, raising funds and using the mass media.

IB 35	His/Her publicity materials have been used by other counties in the region.	3.5						
IB 36	Reaches an audience not served by Extension through a newsletter.	3.5						
IB 22	Has obtained increased funds for special projects by making well prepared requests to the county.	3.5						
IB 27	Convinces dubious county officials about the need for a program.	2.5						
IB 28	He/She is recognized but not well known in county.	1.5						
IB 26	Newspaper staff has to cut and rewrite his/her material extensively.	0.5						
IB 29	Alienates clientele and public by becoming personally involved in controversial issues in city or county government.	−1.5						
IB 20	Public officials or other decision makers in the area express positive opinions about the agent and Extension programs.	3.5						
IB 34	Arranges large ceremonial events which run smoothly, are well attended and give favorable impressions to key people.	3.5						
IB 32	Has good rapport with mass media personnel so that Extension activities are publicized.	3.5						

C. PROGRAM IMPLEMENTATION RESULTS (Job Analysis Duties 4, 5, 6 and 7)

This section includes standards for summarizing the agent's results in conducting program activities. These activities include broadening the community's involvement in program activities; organizing and working with groups; recruiting; developing and using lay leaders; preparing educational materials; giving formalized instruction to groups; responding to client's requests for advice and technical assistance and using specialist resources.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IC 51	His/Her program activities have resulted in noteworthy changes in clientele practices.	4.5						
IC 53	His/Her results demonstrations have allayed specific concerns of the public.	3.5						
IC 47	Has developed a series of lesson plans and activities which has wide appeal to both youths and adults.	3.5						
IC 66	Community became aware of a public problem due to his/her program efforts.	3.5						
IC 69	Additional sessions sometimes are set up to accommodate overflow response to agent's program activities.	3.5						
IC 71	His/Her program projects have been successful enough to be repeated in different parts of the country.	3.5						
IC 125	His/Her educational materials have been used repeatedly.	3.5						
IC 42	His/Her results demonstrations have received good coverage from the media.	2.5						
IC 38	Many of the attendees' questions are answered in his/her program presentations.	2.5						
IC 56	Has active programs, but does not branch out to reach new audiences.	1.5						
IC102	Members have expressed need for more program activities but none have been offered by agent.	−0.5						
IC 57	Some of his/her program events have become annual events.	3.5						
IC 76	As a result of his/her educational activities, clientele gain a better understanding of the basics.	2.5						
IC 99	Key community people give lukewarm support to programs.	0.5						
IC101	Has persuaded reluctant community officials to serve on committees.	2.5						
IC110	Committee members are confused and do not know what is expected of them.	−.05						
IC 77	All committee members are involved in carrying out at least one activity that was developed in the plan of work.	2.5						
IC 95	All his/her leaders are organizing or leading established groups.	3.5						
IC105	The impact of his/her leaders in program accomplishments is about the same as that of the average agent.	1.5						
IC 55	Has lost the interest of the volunteer leaders.	−1.5						
IC 100	Has motivated and developed leadership in volunteers who were initially passive or difficult to work with.	3.5						
IC 111	Has increased the amount of time leaders volunteer.	3.5						

(continued)

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IC 114	Has little or no premature turnover among volunteer leaders.	3.5						
IC 84	Has been able to break sex or minority barriers in the filling of volunteer leadership positions.	3.5						
IC 67	Has high project completions or accomplishments by volunteer groups.	3.5						
IC 89	Has recruited and developed leaders of new groups to a point where they can function independently.	3.5						
IC 93	Leaders have lost respect for the agent.	−1.5						
IC 98	Volunteer groups can rely on his/her to help them prepare for events.	2.5						
IC 96	Good volunteer leaders have resigned in protest over agent's actions.	−1.5						
IC 116	Volunteers gain leadership experiences.	3.5						
IC 72	Adoption of a new practice recommended by agent has expanded from a few local innovators to become commonplace among the clientele group.	3.5						
IC119	Clients have come to depend on the agent's newsletter for in-depth information.	3.5						
IC 73	Saw need for and developed a technical newsletter for which there developed a long mailing list.	3.5						
IC 54	Has been responsible for several persons winning county or state awards.	2.5						
IC 118	His/Her educational projects have made a significant impact on the local community.	3.5						
IC 104	Gets initially hesitant persons to participate successfully in a project.	3.5						
IC 122	Has overcome initial lack of trust of a clientele group in a program activity.	3.5						
IC 83	His/Her programs are very popular with local people.	3.5						
IC 128	Is recognized by clientele groups as having the skills to assist them.	3.5						
IC 65	Is sought after as a speaker for area and state programs on certain subjects.	3.5						
IC 106	Gets other agencies to cut red tape in order to accomplish program objective.	3.5						
IC 90	Has gotten other relevant public agents in area to cooperatively plan an activity for the community.	3.5						
IC 97	Got several relevant agencies to share resources and staff responsibilities in providing a successful new program for clientele.	3.5						
IC 78	Utilizes the help of a few specialists, but their maximum contributions are not realized.	0.5						
IC 124	Has chosen resource persons to speak whose lack of practical experience discredited them in the audience's eyes.	−0.5						

D. PROGRAM SUPPORT RESULTS (Job Analysis Duties 8, 9, 12 and 13)

This section includes standards for summarizing the agent's results in reporting and evaluating program activities and accomplishments; performing office management and administrative tasks and continuing professional development.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
ID 132	Keeps good records and memos to capitalize upon the next event or for next staff member to use.	3.5						
ID 129	His/Her reports indicate program progress with tangible facts such as numbers, dollars, or definite changes in attitudes, knowledge, or skill.	3.5						
ID 144	His/Her reports are on time and well done.	2.5						
ID 145	Immediately following activity, he/she completes the necessary evaluation forms.	2.5						
ID 136	Has about as many graduate or summer school credits as the average agent with the same tenure.	1.5						
ID 135	Involves few volunteers and local leaders in evaluating programs.	0.5						
ID 141	Shows little or no tangible evidence of professional growth after training.	−0.5						
ID 140	Files are in fair condition.	2.5						
ID 143	Is well regarded for making personal sacrifices for professional self improvements.	2.5						
ID 139	Often gets nearly 100% returns from participants to his/her evaluation forms.	3.5						

A. PROGRAM PLANNING BEHAVIORS (Job Analysis Duties 1, 2, and 3)

This section includes standards for summarizing the agent's behaviors in assessing community needs, involving the community in the planning process, preparing long-range and annual plans, planning specific program activities and events, and managing his/her own time.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IIA 24	Thoroughly plans programs with extensive involvement of organized advisory groups, community leaders, public officials and representatives of intended audiences.	4.5						
IIA 19	Thinks through each month, each week, each activity and knows by item what needs to be done and where everyone will be or should be.	3.5						
IIA 18	Anticipates new clientele and actively involves them in the planning process.	3.5						
IIA 9	Often uses formal surveys to determine community needs.	2.5						
IIA 6	Plan of work sometimes needs to specify more clearly leadership and staff involvement for implementing plan.	1.5						
IIA 4	Determines objectives, but they are sometimes not well defined as to audience, content and expected behavior.	0.5						
IIA 3	His/Her plan of work is only partially based on problems and objectives stated in long-range plans and situational statements.	0.5						
IIA 10	Writes a plan of work, then ignores the plan and does unrelated programs.	−0.5						
IIA 25	Sees total picture – state, county, and local—in his/her program planning.	4.5						
IIA 21	Identifies a specific target audience in planning programs.	3.5						
IIA 8	Provides summary reports of previous years activities at planning meetings.	2.5						
IIA 5	His/Her plan of work is aimed at a somewhat limited segment of the county population.	0.5						
IIA 1	Does not fully establish priorities.	0.5						
IIA 11	Is haphazard in organization of events, doing only what has to be done.	−0.5						
IIA 17	Plans a program that is timely and meets the needs of the people.	3.5						

B. PROGRAM PROMOTION AND PUBLIC RELATIONS BEHAVIORS (Job Analysis Duty 10)

This section includes standards for summarizing the agent's behaviors in promoting programs and the Extension Service, raising funds and using the mass media.

IIB 27	Maintains good relations with local officials and the power structure.	3.5						
IIB 34	Has written human interest stories to highlight aspects of Extension work.	2.5						
IIB 37	Maintains communication with some local leaders, organizations and groups.	1.5						
IIB 38	Efforts to assist with planning and implementating public relations programs lack consistency.	0.5						
IIB 43	There are some parts of the program that he/she sees as being unimportant and thus will not be concerned with them.	−0.5						
IIB 32	Makes original use of mass media.	2.5						
IIB 35	Is involved in at least one community activity or organization not related to Extension.	2.5						

(continued)

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IIB 39	Makes insufficient use of one or more of the mass media.	0.5						
IIB 44	Shows disregard for local values and customs.	−1.5						
IIB 36	Has developed a county-wide mailing list of interested individuals.	2.5						

C. PROGRAM IMPLEMENTATION BEHAVIORS (Job Analysis Duties 4, 5, 6 and 7)

This section includes standards for summarizing the agent's behaviors in conducting program activities. These activities include broadening the community's involvement in program activities; organizing and working with groups; recruiting, developing and using lay leaders, preparing educational materials; giving formalized instruction to groups; responding to clients' requests for advice and technical assistance and using specialist resources.

IIC 59	Continually looks for and finds new audiences to work with.	3.5						
IIC 68	Exhibits innovative teaching techniques.	3.5						
IIC 73	Almost never uses "canned" materials for an audience.	2.5						
IIC 71	Writes teaching goals and outlines lesson plans to accomplish the goals.	2.5						
IIC 95	Does a fair job of teaching in assigned subject matter area.	1.5						
IIC 81	Effectively uses only a portion of teaching methods.	0.5						
IIC 78	Takes for granted people understand what he/she is saying.	−0.5						
IIC 72	Presents information already known by the audience.	−0.5						
IIC 48	Shows prejudice in dealing with minorities and low-income audiences.	−1.5						
IIC 87	Does thorough research before conducting method demonstrations.	3.5						
IIC 92	Teaches most recent information on the subject.	3.5						
IIC 70	Always does some teaching in every educational activity for which he/she has responsibility.	2.5						
IIC 49	Considers time, place and other circumstances in organizing a group.	2.5						
IIC 64	Conducts programs in the county in all locations to meet the needs of all people, irrespective of race, color, national origin or economic circumstances.	3.5						
IIC 53	Requires prodding to get him/her to expand program to cover all major interests and enterprise.	−0.5						
IIC 98	Uses imaginative and appropriate techniques to persuade the client to try or to adopt recommended practices.	3.5						
IIC 100	Introduces innovations on a trial or demonstrative basis, selecting and finding cooperators carefully.	3.5						
IIC115	Provides accurate, complete, and current information or assistance.	3.5						
IIC 110	Delays recontacting a client.	0.5						

(continued)

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IIC 101	When he/she receives call for technical assistance, makes excuses for not providing assistance requested.	−0.5						
IIC 108	Gives information from "top of the head" – often not documented by research.	−1.5						
IIC 103	Doesn't take seriously the questions, problems, or concerns brought by clients.	−1.5						
IIC 106	Gives generalized answers to callers with specific inquiries.	0.5						
IIC 112	Recommends new products only after adequate trial.	2.5						
IIC 54	Devotes personal individual attention to new leaders, counseling and advising them and strengthening their abilities and confidence.	3.5						
IIC 46	Obtains new leaders without conferring with other staff members who are acquainted with prospective leaders.	0.5						
IIC 47	Recognizes leaders with only a few methods of recognition.	0.5						
IIC 62	Asks volunteers to do things at the last minute.	−0.5						
IIC 55	Involves a few volunteer and local leaders in implementing programs.	0.5						
IIC 58	Provides leaders wtih opportunities to serve and exercise their leadership skills in limited areas.	0.5						
IIC 60	Does a fair job of identifying and recruiting local leaders.	1.5						
IIC 76	Uses specialists and resource people to maximum advantage.	3.5						
IIC 69	Gives specialists ample notice so they can work meetings into their schedules.	2.5						
IIC 79	Is unwilling to teach subject areas, relying totally on specialist or other resources.	−0.5						
IIC 102	Has a breadth and depth of knowledge about a range of specific facts, methods and principles.	3.5						

D. PROGRAM SUPPORT BEHAVIORS (Job Analysis Duties 8, 9, 12 and 13)

This section includes standards for summerizing the agent's behaviors in reporting and evaluating program activities and accomplishments; performing office management and administrative tasks and continuing professional development.

IID 117	Develops evaluative materials for program during planning stage.	3.5						
IID 116	Measures accomplishments in terms of behavioral objectives.	3.5						
IID 135	Gives examples in reports of changes in behavior.	3.5						
IID 123	Evaluates program offerings in a variety of ways and documents results.	2.5						
IID 120	Selects certain program goals for in-depth evaluation using surveys and instruments designed for that specific program.	2.5						

(continued)

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IID 140	Includes a variety of tables and graphic means of presenting meaningful information.	2.5						
IID 121	His/Her program evaluations are not totally inclusive of activities, reports, events, and committee work throughout the year.	0.5						
IID 127	Evaluates programs based mainly on his/her observations.	0.5						
IID 151	Does not keep an accurate record of all office callers.	0.5						
IID 130	His/Her evaluations consist mostly of a list of agent inputs, activities performed, and amount of participation.	0.5						
IID 144	Does not take advantage of professional societies of which he/she is a member for professional improvement.	0.5						
IID 128	Does not set behavioral objectives as a means for evaluating programs.	−0.5						
IID 149	Has far fewer credits in graduate or summer school than most agents with same amount of tenure.	−0.5						
IID 155	Is conscientious about the office appearance at all times.	2.5						
IID 132	Interprets statistical data appropriately.	2.5						
IID 160	Routine office jobs are not performed efficiently.	0.5						
IID 125	Evaluates results at time of annual planning rather than making evaluation a continuous process.	0.5						
IID 145	He/She re-evaluates his/her job and program performance at periodic intervals during the program year.	3.5						
IID 119	When no formal evaluation is possible, follows up with clients and/or peers to discover strengths and weaknesses in program.	3.5						
IID 157	Lets supplies of bulletins and other needed information and materials run out.	0.5						
IID 133	Writes long reports without really saying anything important.	−0.5						
IID 147	Reads, studies, and learns from a variety of sources.	2.5						
IID 141	Participates in professional improvement activities whenever possible.	2.5						
IID 131	Keeps accurate records of accomplishments for reporting purposes.	3.5						
IID 126	Has an effective way of questioning and observing clients to determine how much technical information is being used or if attitudes are changing.	3.5						

E. INTERPERSONAL AND PERSONAL BEHAVIORS GENERALLY RELATED TO JOB (Job Analysis Duty 11 and Job Pervasive)

This section includes standards for summarizing the agent's interpersonal and personal behaviors and characteristics that are generally related to job responsibilities.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
IIE 176	Deals with difficult interpersonal problems by bringing the individuals together to talk it out.	3.5						
IIE 168	Keeps co-workers informed of actions that affect the entire office.	3.5						
IIE 194	Maintains a professional image at all times.	3.5						
IIE 161	Takes time to help a co-worker with a problem.	3.5						
IIE 199	Cares less about self-recognition and praise than about meeting the needs of the people.	3.5						
IIE 219	Has innovative ideas, but does not try to force change.	2.5						
IIE 220	Arrives at work on time.	2.5						
IIE 189	Accepts failure without placing blame on others.	2.5						
IIE 221	Greets a new idea by looking for its inadequacies.	0.5						
IIE 187	Tries to take sole credit for whatever is accomplished.	−1.5						
IIE 166	Refers compliments heard about other staff workers outside the office back to the person.	2.5						
IIE 191	Doesn't try to "snow" people.	2.5						
IIE 222	Is late for meetings or activities.	−1.5						
IIE 192	Enjoys working with people.	2.5						
IIE 200	Follows up on contacts and/or commitments.	3.5						
IIE 178	Allows others to receive recognition even when he/she is the main reason for the achievement.	3.5						
IIE 196	Radiates enthusiasm for job.	3.5						
IIE 172	Helps motivate people of all levels.	3.5						
IIE 174	Handles conflict calmly.	3.5						
IIE 208	Works irregular and extra hours when necessary.	3.5						

A. SUPERVISORY PERFORMANCE (Job Analysis Duty 14)

This section includes standards for summarizing the supervisory performance of agents who have official responsibility for supervising other employees.

Table A-1 Reference Number	Standard		Agree	Disagree	Neither	Don't Know	NA	
III 14	Isn't too busy to converse with subordinates no matter how small the details.	3.5						
III 40	Explains to subordinates why resources aren't available instead of simply saying "NO".	3.5						
III 41	Allows time for discussion of plans and accomplishments.	2.5						
III 9	Listens to subordinates' complaints.	2.5						
III 10	Helps coordinate work with secretary.	2.5						
III 11	Has adequate resources for a basic program.	1.5						
III 13	Reports programs and activities to subordinates when asked.	1.5						
III 34	Overrules ideas that subordinates have without giving the idea a fair trial.	−0.5						
III 39	Fails to leave or provide complete and meaningful instructions to subordinates.	−0.5						
III 7	Plays down the ideas of subordinates.	−1.5						
III 18	Doesn't discuss problems with office staff who could have some insight for solving the problem.	−1.5						
III 26	Makes time to give direct supervision to less experienced or less capable agents.	3.5						
III 25	Holds office conferences to coordinate activities of all staff.	3.5						
III 6	Updates subordinates on all programs and events as the need requires.	2.5						
III 38	Waits till last minute and then expects the secretaries to do the needed work.	−0.5						
III 28	He/She tries to do everything rather than delegate some of it.	−0.5						
III 19	Takes sides in disagreements among subordinates.	−1.5						
III 15	Helps subordinates get equipment and resources needed.	3.5						
III 24	Secretarial work load is planned sufficiently in advance to allow for both priorities and routine needs of staff.	3.5						
III 30	Assesses needs of individual staff workers in office.	3.5						

SUMMARY OF RESEARCH SERIES

Organizations use different methods in evaluating their personnel. Most agencies have been seeking better ways to appraise their personnel so that proper decisions can be made about merit pay, promotions, and related matters. The Cooperative Extension Service contracted the development of procedures for evaluating personnel performance based upon standards. This study tests the reliability and validity of those procedures. It should be of interest to Extension administrators and others interested in performance appraisal of personnel.

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Research has been an important function of the Department of Agricultural Education since it was established in 1917. Research conducted by the Department has generally been in the form of graduate theses, staff studies and funded research. The purpose of this series is to make useful knowledge from such research available to practitioners in the profession. Individuals desiring additional information on this topic should examine the references cited.

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